

REMARK

Claim 15 has been amended to recite the features of claim 20 and 29. The claim has been amended to expedite prosecution. No new matter has been added.

Rejections under 35 U.S.C. 102(b)

Claims 15, 18, and 19 stand rejected under 35 U.S.C. 102 as allegedly anticipated by Saida et al. (Japanese Patent Publication 62-275182). The amendments to the claims render the rejection moot.

Saida et al. teaches formation of particles for intercepting ultraviolet rays made from a complex oxide of zinc and more than one type of the following metals: aluminum, iron, chromium, cerium zirconium and titanium. At page 7, lines 14-24 of Saida et al., the proportions of the respective metal oxides constituting the complex metal oxide are given in terms of atomic ratios. The atomic ratio of titanium to zinc is 0.01-0.25 (preferably 0.05-0.1). The atomic ratio of aluminum to zinc is 0.001-0.5 (preferably 0.01-0.4). On page 4 of the Office Action, the Examiner points out a preferred embodiment of Saida et al., in which 9.24g titanium oxide, 23.6g aluminum oxide, and 94.1g zinc oxide are mixed. Thus, the resulting complex oxide comprises 7.25 wt.% of TiO_2 , 18.6 wt.% of Al_2O_3 , and the balance, namely 74.15 wt.% of ZnO . One skilled in the art would recognize that zinc oxide occupies the major proportion of the matrix while titanium dioxide and aluminum oxide are present in relatively minor amounts.

Saida et al. is silent regarding a titanium dioxide of rutile crystalline form comprising 0.05 to 0.4% by weight of aluminum oxide and 0.1 to 0.8% by weight of zinc oxide, the balance being titanium oxide.

Thus, it is respectfully requested that the rejections under 35 USC §102 be withdrawn.

Rejections under 35 USC §103

Claims 16 and 17 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Saida et al. (Japanese Patent Publication 62-275182, Published 11/30/1987).

As noted above and as the Examiner notes on page 5 of the Office Action, Saida et al. does not anticipate a particle of titanium dioxide having an aluminium oxide concentration of 0.05 to 0.4% and a zinc oxide concentration of 0.1 to 0.8%.

At page 5 of the Office Action the Examiner states: "It would have been obvious to one of ordinary skill in the art at the time of the instant invention to manipulate the amounts of titanium oxide, zinc oxide and aluminum oxide in order to determine the proper concentration needed to form a particulate useful in sunscreen applications." However, there is a significant difference between the optical properties of a particle of the present invention and the optical properties of a particle as disclosed by Saida et al. The difference in optical properties stems not only from the significant differences in particle size but also the proportions of TiO_2 , Al_2O_3 , and ZnO . Other than the hindsight of Applicant's disclosure, there is nothing to motivate such a dramatic change in composition.

Saida et al. teaches a particle having a large majority ZnO content (e.g., 74.15 %). There is nothing within Saida et al. that would lead a skilled worker to decrease the ZnO from a majority balance to a ZnO concentration of 0.1 to 1%. Furthermore, Saida et al. does not suggest or motivate a skilled worker to change the amount of titanium dioxide from a minor amount (e.g., 7.25 wt.% of TiO_2) to arrive at a particle having a majority titanium dioxide content.

There is no teaching or suggestion within Saida et. al. that would lead a skilled worker to dramatically change the proportions of zinc, aluminum and titanium to arrive at a particle of the present invention. Thus, it is respectfully requested that the rejections under 35 USC §103 be withdrawn.


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Response
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Rejoinder of Non-Elected Claims

It is believed that the elected claims are in condition for allowance. As to non-elected claims 20-24 (drawn to a method of making particulate titanium dioxide) and claims 25-28 (drawn to methods of using particulate titanium dioxide), applicants request that these claims be rejoined with the allowed compound claims, pursuant to the Official Gazette Notice regarding the *In re Ochiai*, 37 U.S.P.Q.2d 1127 (Fed.Cir. 1995), and *In re Brouwer*, 37 U.S.P.Q.2d 1663 (C.C.P.A. 1996) decisions. See also M.P.E.P. §821.04 ("Rejoinder"). The withdrawn claims depend directly or indirectly from subject matter, which Applicants believe to be allowable. Thus, rejoinder would not create any additional search burden.

No fee is believed to be due with this response, however, the Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,


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